

NATIONAL MARINE SANCTUARY OF AMERICAN SAMOA

Superintendent's Update Report

April 2012 to October 2012

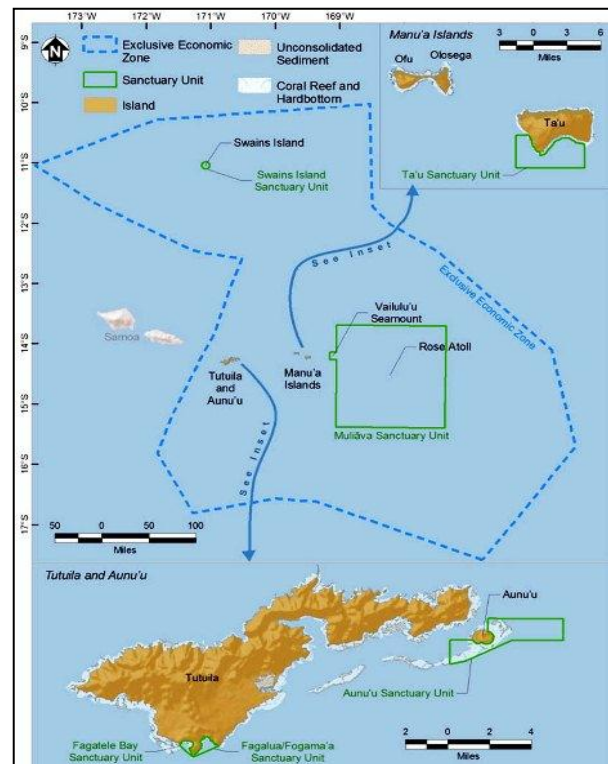


The Superintendent's Update Report highlights major activities that have occurred at the National Marine Sanctuary of American Samoa between April and October 2012. It also includes an overview of upcoming events, activities, and priorities over the next six months.

Accomplishments

National Marine Sanctuary of American Samoa

A final rule that expands the boundaries of NOAA's Fagatele Bay National Marine Sanctuary and changes the name of the sanctuary is now in effect. Originally published in July, the final rule directs NOAA to provide enhanced protections and management for most of Rose Atoll Marine National Monument under the authority of the National Marine Sanctuaries Act. Additionally, NOAA will extend sanctuary protection to four additional marine areas in American Samoa: Fagalu'a/Fogama'a (also known as Larsen Bay) and waters around Swains Island, Aunu'u Island and Ta'u Island, home to some of the oldest and largest known corals in the world. Together with the existing Fagatele Bay National Marine Sanctuary, these protected areas will now be known collectively as the "National Marine Sanctuary of American Samoa." The sanctuary will encompass 13,523 square miles of protected waters - a significant increase from the 0.25 square miles of Fagatele Bay - taking it from the nation's smallest marine sanctuary to the largest.



Cultural Heritage and Community Engagement

Transition Report

NMSAS Staff completed a Transition Report to introduce the new administration to the programs and priorities of the sanctuary office.

Hyperbaric Chamber at LBJ

Unveiling of the first monoplace unit occurred in May, 2012 at the LBJ Hospital that will greatly benefit the Territory not just for dive decompression incidents but treat non-healing wounds that are common among diabetic patients to avoid amputation of limbs. An estimated 40% of the Territory's population suffers from diabetes. This unit will help address residents suffering from this disease as well as spark new niche dive interest from visitors who are keen to see the best we can offer in rich coral reef environments



Aunu'u Transit Fale & Signs

In honoring the wishes of the Aunu'u Village Council when NMSAS launched Bruckner Chase's marathon swim last year, the program worked with the village *Aumaga* to complete a transit *Fale* for both residents and visitors to find shade and use as a gathering place while waiting for the water taxis to and from ports. In addition to the *Fale*, interpretative signs were also completed.



Marine Conservation Science

American Samoa Rapid Assessment and Monitoring Program

In April, the Coral Reef Ecosystem Division (CRED) spent nearly three weeks conducting fish and habitat surveys across Tutuila Island, Manu'a, Swains, and Rose Atoll. NMSAS Research Coordinator Wendy Cover surveyed corals along the first leg, including Fagatele Bay,



Fagalua/Fogama'a, and Aunu'u. Surveys and research operations were conducted off of the NOAA ship Hi'ialakai as part of the biannual American Samoa Rapid Assessment and Monitoring Program. Monitoring studies conducted in Fagatele Bay included an assessment of coral demographics, surveys of algae and benthic organisms, fish surveys, and collection of water samples to test for nutrients and productivity. There were also two different sets of collection plates deployed, one to measure rates of calcification and acidification of coralline algae, and the other to collect cryptic marine invertebrates for biodiversity assessments. Plates will be collected in 2-3 years and compared to collections in previous and future years to assess change in communities and potential impacts from climate change and ocean acidification. Data collected from all sites will be used to compare marine populations across all islands in American Samoa, including Rose and Swains, as well as other US-affiliated islands. This collaboration between CRED and FBNMS provides the research capacity that is critical to understanding the status of our National Marine Sanctuary in the context of the broader Pacific region.

Crown-of-Thorns Removal



The NMSAS Research Coordinator has joined a multi-agency effort to remove excessive numbers of crown-of-thorns starfish (COTS) from local reefs. COTS eat corals, and though normally present at very low levels, outbreaks with thousands to millions of individuals can occur, decimating reefs. In the late 1970's, an outbreak killed over 90% of the corals in



Fagatele Bay. High numbers have recently been reported on multiple reefs, so removal efforts have begun in the hope of reducing numbers before the breeding season and preventing secondary populations from forming. COTS are being physically removed from the water by the combined effort of divers and snorkelers from each of the local marine management agencies.

Reef Resilience Workshop

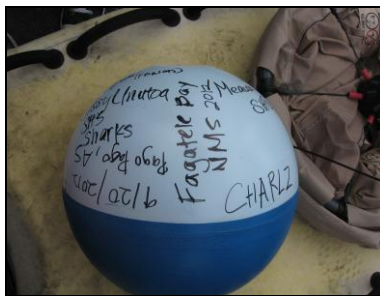
A two-day reef resilience workshop in June brought together representatives from local government agencies to discuss ways that everyone can contribute to reef conservation efforts. The workshop was a multi-agency effort, organized and run by NOAA Pacific Islands Regional Office, the Department of Marine and Wildlife Resources, the Coral Reef Advisory Group, the National Park Service, the American Samoa Community College, and the National Marine Sanctuary. Participants heard talks introducing them to coral reefs and the major threats they face from climate change, pollution, and overfishing. Dr. Cover (NMSAS) presented on ways to protect the reef and promote resilience. A representative from the South Pacific Regional Environmental Programme (SPREP) presented reef resilience projects happening throughout the Pacific. Participants broke into discussion groups to brainstorm what threats they have seen here in American Samoa, and ways to promote resilience on our reefs. The workshop concluded with a snorkeling trip to Faga'alu, with viewing buckets available for those who are unable to swim. Participants reported learning a great deal about reefs and forging new partnerships with workers from other agencies. A third day focused on training future resilience workshop trainers to target local communities.

Assessment and Rapid Reef Response (ARRR) Plan

In order to prepare a coordinated response to reef emergencies, representatives from local management agencies, coordinated by the Coral Reef Advisory Group, have jointly drafted a response plan to address major reef disasters such as a mass coral bleaching event, hurricane, crown-of-thorns outbreak, or disease event. Called the Assessment and Rapid Reef Response (ARRR) Plan, it draws from the resources and expertise of each of the participating agencies: the Department of Marine and Wildlife Resources, the NOAA Pacific Islands Regional Office, the American Samoa Community College, the National Park Service, and the National Marine Sanctuary. It coordinates efforts among the agencies for surveying, monitoring, outreach, and potential remediation. The sanctuary's Research Coordinator contributed to the planning, design, and writing of the document. The plan will guide future actions and change as needed to accommodate new management realities. Response plans are considered an essential planning tool to ensure a rapid and appropriate response to sudden coral death.

Student Drifter Buoy

Eight area students deployed a NOAA ocean drifter into the waters 3-miles offshore of Fagatele Bay this September. This drifter buoy from American Samoa now contributes to a global array of drifters that yield vital environmental data on currents and temperature.



Participating students came from the Ocean Swimming/Ocean Science course at Samoana High School, as well as from South Pacific Academy, Manumalo Baptist, Kanana Fou and Nu'uuli Vo-Tech. The deployment is the first time high school students have launched a drifter buoy from American Samoa. The students will follow the buoy via a webpage that maps the current location and path. The drifter provides a way for students and the public to become involved in scientific research and learn more about our ocean.

Deployment of Data Loggers in Fagatele Bay

The sanctuary has started temperature and conductivity monitoring in Fagatele Bay as part of a project to monitor key climate change indicators within sanctuary waters. Sanctuary scientists, with the assistance of ASCC interns, attached small waterproof Hobo data loggers to the reef at multiple depths. The loggers will record temperature and conductivity every 10 minutes, giving a detailed picture of the conditions our corals and other reef organisms are facing



under a changing climate. Further loggers will be deployed in Fagalua/Fogama'a and off of Aunu'u to monitor these variables across sanctuary units.

Climate Change

Green Operations Plan

NOAA Holling's Scholar Autumn Rauchwerk assisted staff in the development of a Green Operations Plan to inform sustainable maintenance and operations of the Tauese P.F. Sunia Ocean Center and Sanctuary Offices. The plan was informed by Executive Order 13514 (2009) which calls for increased energy efficiency, reduced petroleum use, water conservation, waste reduction, support for sustainable communities, and promotion of environmentally responsible products in federal agencies. The plan also supports the Climate Smart Sanctuary initiative.

Climate Smart Review Panel

A Climate Smart Review Panel convened in August to assess the steps taken by the Sanctuary to complete the Climate Smart certification standards as proposed by the Office of National Marine Sanctuaries (ONMS). The Review Panel heard a presentation from the NMSAS Policy Analyst and they were given the opportunity to ask questions about the process. The Review Panel assisted in the development of an Assessment Report which has been submitted to the Certifying Authority. If the Review Panel and Certifying Authority determine that the Sanctuary has sufficiently met the requirements, the Sanctuary will be the first Climate Smart Sanctuary in the nation.

Economic Valuation of Coral Reefs under Changing Climate Conditions

NOAA Holling's Scholar Austin Collins collaborated with ASCC Marine Science students to assess the non-market value of coral reefs in American Samoa under changing climate conditions. They used choice modeling experiment to determine public preference for coral reefs and willingness to pay to increase reef resilience to potential climate impacts. The results of the survey suggest that many American Samoans are concerned about potential climate impacts to coral reefs and they would be willing to pay to help protect coral reefs against potential threats. In particular, many American Samoans support a reduction in overfishing and harmful fishing practices, as well as the establishment of marine protected areas, to increase reef resilience. These results can be used to inform climate adaptation planning in the coastal and marine environment in American Samoa.

Ocean Literacy

Tauese P.F. Sunia Ocean Center



The Tauese P.F. Sunia Ocean Center officially opened to the public on September 10, 2012 the visitor center has welcomed over 3,300 visitors providing them with guided tours which encompass the essence of good marine stewardship. Nearly half of the visitors are students ranging from Kindergarten to students from ASCC. The purpose of the Ocean Center is to provide the community with a facility that celebrates the importance of cultural and natural ocean resources in the

Territory. The Ocean Center is a learning, training and discovery center with state-of-the-art exhibits which features the Science On a Sphere (SOS) and interactive educational learning tools that support the vision of the center. The exhibits address the value of coral reefs, understanding the ocean ecosystems, and how our culture ties into the management of coral reefs. In addition, information on the natural and anthropogenic threats to our reefs are brought to the forefront.

Volunteers

The Sanctuary Volunteer Program kicked off on August 13, 2012 at the Tauese P.F. Sunia Ocean Center with a total of seven volunteers: six American Samoa Community College students and one high school student. Duties entail assisting NMSAS staff at the Tauese P.F. Sunia Ocean Center as docents/tour guides and greeters. Volunteers are also requested to assist with educational outreach programs/projects, research collection, and NMSAS special events.

Ocean Swimming/Ocean Science

The American Samoa Department of Education (DOE) requested the Ocean Swimming/Ocean Science (OSOS) program for the 2012-2013 school year. Based on recommendations from the students, as well as the instructors, the OSOS team created a curriculum that will enable the students to become not only proficient swimmers, but also effective stewards of our ocean. The program has also expanded to include an additional teaching day. The kick off of the second OSOS program started on August 20, with an enrollment of 25 new students. The OSOS program is sponsored by the National Marine Sanctuary of American Samoa and the American Samoa Department of Commerce, in partnership with the Department of Education and the American Samoa Aquatic Agency.

NOAA Ocean Drifter Deployment



Eight area students deployed a NOAA ocean drifter into the waters 3-miles offshore of Fagatele Bay this September. This drifter buoy from American Samoa now contributes to a global array of drifters that yield vital environmental data on currents and temperature. Participating students came from the Ocean Swimming/Ocean Science course at Samoana High School, as well as from South Pacific Academy, Manumalo Baptist, Kanana Fou and Nu'uuli Vo-Tech. The deployment is the first time high school students have launched a drifter buoy from American Samoa. The students will follow the path of the buoy via a webpage that maps out the current. Staff at the sanctuary coordinated the launch in American Samoa, in partnership with the NOAA Adopt a Drifter Program, the Ocean Swimming/Ocean Science course at Samoana High School, South Pacific Academy, Manumalo Baptist, Nu'uuli Vo-Tech and the assistance of the local Marine Patrol unit.

Future Plans

Tauese P.F. Sunia Ocean Center

- NMSAS plans to host themed tours for each month that correlate with NOAA National Awareness Weeks that target government agencies, private sector, education, and tourism industry.
- NMSAS plans to conduct outreach events throughout the year that interest families and village communities.
- NMSAS plans to host a “Kids Film Festival” during summer break. Films that promote good ocean stewardship will be screened with educational trivia to follow. Screenings will be free to the public.
- For special events and days American Samoa receives cruise ships, the Ocean Center has proposed to have a traditional village display in the parking lot to celebrate each sanctuary unit. The display will consist of six tents for each village that possess a sanctuary unit. Members or representatives of the village will be able to showcase their unique qualities through food, handicrafts or performing arts.
- In cooperation with the American Samoa Department of Commerce and the American Samoa Development Bank, NMSAS exploring the feasibility of constructing a boat shed to house R/V Manuma and to host cultural demonstrations.

Village Strategy

The Cultural Heritage and Community Engagement Action Plan directed sanctuary staff to develop and implement a village strategy to outline proper procedures and protocol for community engagement in American Samoa. The Sanctuary Cultural Liaison has formalized a village strategy which outlines specific steps that sanctuary will take when they work with sanctuary communities. Sanctuary staff will continue to work with the Office of Samoan Affairs to highlight the importance of community and *fa’a Samoa*. In addition, there will be active involvement and engagement of the community in sanctuary management and operations through the volunteer program and the Sanctuary Advisory council. This plan also supports the development of a Samoan Cultural Heritage working group which can provide additional support to the sanctuary advisory council.

Volunteers

NMSAS is in the process of recruiting volunteers from sanctuary communities to participate in a tour guide training program. The program will provide students with information about ocean awareness, safe fishing methods, and pride in their village treasures. The intent is to have volunteers from each village that has access to a unit provide guided tours and hikes to visitors. Upon completion of the NMSAS Training Manual for Docents and Tour Guides of the Tauese P.F. Sunia Ocean Center and sanctuary units, volunteers will undergo a series of training from basic knowledge of temporary medical relief, emergency evacuation, hiking and trail etiquette, as well as cultural sensitivity.

Economic Impact Assessment

NMSAS has collaborated with the Institute for Research, Labor, Employment & the Economy at the University of Michigan to assess the economic impact of the sanctuary expansion on the people and businesses in American Samoa. The outputs from the study will allow researchers to forecast potential

impacts in the near, medium, and long term-future for the territory. The methodology for this research will consist of data collection, analysis, strategic planning, and reporting. The research will help inform recommendations for initiatives, activities, projects, programs and other actions that could be taken to enhance the economic impact of the Sanctuary, as well as increase the number of tourists and visitors to the region. Additional recommendations will also be made to increase opportunities for existing businesses that serve the populations and activities that are associated with the Sanctuary, as well as potential opportunities for new venture creation.

Sanctuary Video Project

The sanctuary office is in the process of developing a promotional film about the natural and cultural resources in American Samoa. The purpose of the film is to capture, through the use of moving imagery and sound, the essence of American Samoa as a thriving natural resource with the focus on how that impacts its people, place, and culture. The footage will be shot on location at villages, beaches, and other places of interest. Additionally elders and prominent figures in American Samoan society will be interviewed. There will also be an underwater filming component to complement the topside filming. The video formatting will allow the feature to play on the Science on a Sphere[®] and DVD.

Implementation of Action Plans

NMSAS has begun the implementation of the activities outlined in the eight Action Plans in the Management Plan. In September 2012 began to develop and outline key priorities for the next five years:

- Visitor Services Program and Plan for NMSAS
- Communication Plan
- Science Plan
- Education and Outreach Program and Plan

Natural Disaster Response & Dive Accident Management Week

Natural Disaster Response & Dive Accident Management Week is planned for April 2013. This will be the first time that this event will be held in American Samoa. During the event, disaster response during a natural disaster is simulated in the harbor. Participants will engage in drills to learn how to respond to extreme weather events, including hurricanes and tsunamis, as well as ship groundings and dive accident. Participants can include government employees, the private sector, local alia boat owners and first responders. Specific training will focus on CPR, first aid, and hyperbaric treatment.